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REMARKS

The enclosed amendments reflect the election responsive to the Restriction Requirement. Claims 5-17 and 22-39 have been canceled. Claim 1 has been amended to include Formula I(a). Claim 18 has been amended to include only the compounds of Formula I(a), and the formula has been added. Claim 40 has been added to recite the composition having a repeat unit selected from Formulae IV(a), IV(b), IV(d) and IV(e), as shown in Figures 4A, 4B, 4D, and 4E. No new matter has been introduced.

CLAIM OBJECTIONS

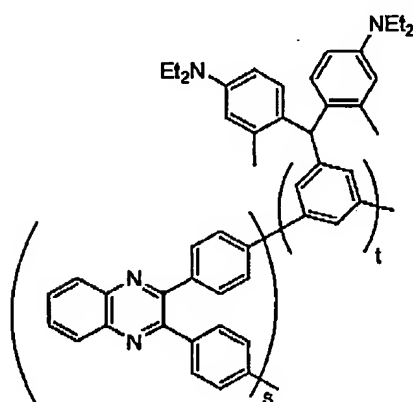
Claims 1-4 were objected to because of informalities and Applicants were advised to add the compound of Figure 1A to the claim language. Applicants submit that the amendments submitted herewith have overcome this objection.

The Examiner also noted that the carbon in Figure 1A was missing a bond. Applicants submit that it is common practice to omit hydrogens in chemical structures, and the Examiner has correctly interpreted this carbon to have an additional hydrogen.

The Examiner further noted that there were no examples utilizing a compound of Formula 1a. Applicants respectfully traverse this statement. Formula IV(a) made in Example 2; Formula IV(d) made in Example 3; and Formula IV(e) made in Example 5. All are polymers having at least one first monomeric unit having Formula I(a), where Ar^1 , Ar^2 , and R^1 are as defined above.

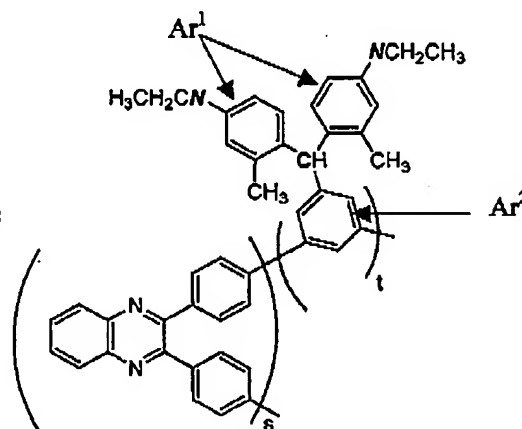
This can be seen more clearly in the structures below, using Formula IV(a), wherein selected nitrogens are shown in italics font, the CH carbon is in bold font, and the ring structures (Ar^1 and Ar^2) are indicated with arrows.

Formula IV(a) can be rewritten including all the carbons and hydrogens, except for those on the phenyl rings, as follows:



Formula IV(a) as
shown in the application

can be written as



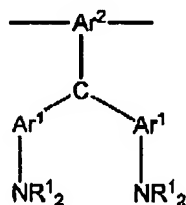
Formula IV(a) rewritten

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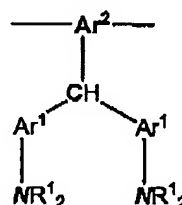
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In the rewritten structure on the right-hand side of the above figures, the central carbon is shown in bold font, and the nitrogens are shown in italicized font. It can be seen that in Formula IV(a) the R^1 is ethyl in every case and both Ar^1 (of which there are two) and Ar^2 are phenyl groups. Thus, Formula IV(a) is a polymer having at least one first monomeric unit having Formula I(a), as Formula I(a) can be rewritten, including the hydrogen atom, as follows:



Formula I(a) as shown
in the application

can be written as



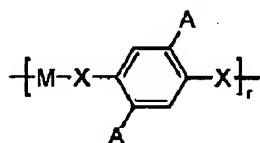
Formula I(a) rewritten

Applicants respectfully submit that the objections have been overcome, and the claims are in condition for examination.

Rejection Under 35 U.S.C. § 102(e)

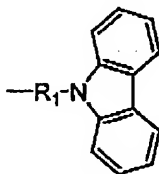
Claims 1, 2 and 4 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Lee* et al., U.S. Patent Publication No. 2003/0197158 ("*Lee*"). Applicants respectfully traverse this rejection.

Lee discloses a polymer having a rigid backbone and flexible side chains. The polymer of *Lee* has a repeat unit structure with Formula 1



[Formula 1]

where X is a carboxyl or amide linkage, and M is a comonomer selected from phenyl, biphenyl, naphthyl, and a monomer having two phenyl groups linked with O, C, or S. The A group in *Lee* is a chromophore selected from Formula 2 or Formula 3 shown below.

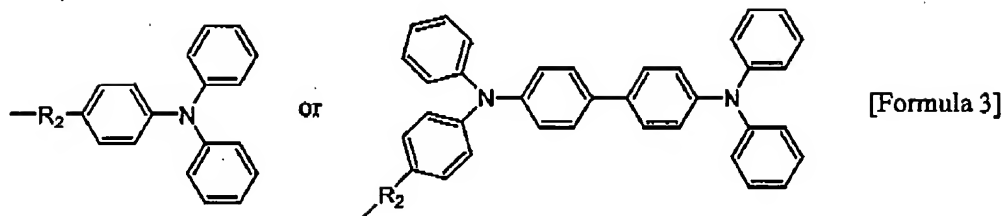
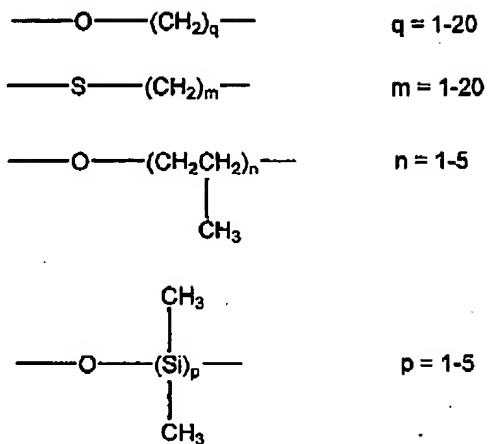
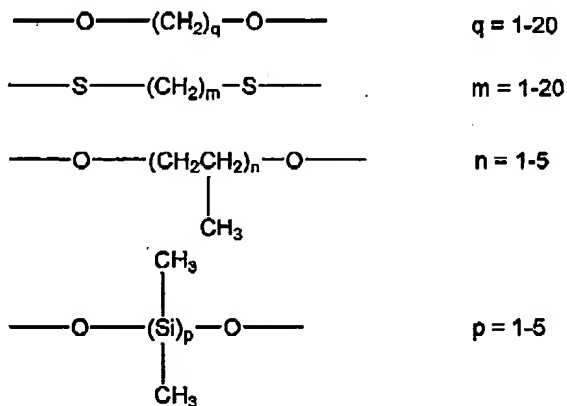


[Formula 2]

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where R_1 iswhere R_2 is

The Examiner has stated on pages 6 and 7 of the office communication, that *Lee* "fails to teach the use of two separate Ar-NR_2 [sic, $\text{Ar}^1\text{-NR}^1_2$] groups on the carbon atom." Applicants agree with this statement, and thusly, it is submitted that the §102 rejection is improper. Applicants provide the following explanation in support of their traversal of this rejection.

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First, there is no carbon in the *Lee* polymer which corresponds to the central carbon in Applicants' Formula I(a), shown in bold above under the remarks to "Objections".

Second, in the polymer of *Lee*, the chromophore group is always linked through an O or S atom, as shown by the *Lee* structures R₁ and R₂. In Applicants' Formula I(a), the central carbon atom having the two Ar¹-NR¹₂ groups is bonded directly to Ar². There is no O or S linkage in Applicants' polymer between the central carbon and Ar². The Examiner has pointed to paragraph 0074 of *Lee*, "wherein the carbazole is taught with a singular CH₂ group." The carbazole recited in Applicants' Claim 3 is representative of the group N(R¹)₂ and is bonded to Ar¹, not an alkyl carbon.

Applicants submit that *Lee* does not teach or suggest Applicants' Formula I(a), and respectfully request that this rejection be withdrawn.

Rejections Under 35 U.S.C. § 103

(1) Valentine, U.S. Patent No. 6,344,505

Claims 2-4 were rejected under 35 U.S.C. § 103 as being unpatentable over *Lee*, as applied above, in view of Valentine, Jr., et al., U.S. Patent 6,344,505 ("*Valentine*"). Applicants respectfully traverse this rejection as well. *Lee* fails to teach or suggest the claimed invention, as explained above. And *Valentine* fails to make up for the deficiency of *Lee*.

Valentine discloses benzotriazole compounds which are useful as UV absorbers to stabilize polymers which are degradable by UV light. *Valentine* also teaches that the benzotriazoles can be chemically bound to the polymer "by copolymerization, copolyaddition, copolycondensation, by reaction with a polymer which carries suitable functional groups or by grafting". Column 19, lines 26-30. The Examiner has stated that it would be obvious to add a side-chain of *Valentine* to the compounds of *Lee*. Applicants disagree with the Examiner's conclusion for at least three reasons.

First, Applicants can find no teaching, suggestion or motivation provided in the cited references to add the benzotriazole of *Valentine* to the polymer of *Lee*. The polymers of *Lee* have high photoconductivity without the addition of plasticizer. There is no suggestion in *Lee* of the need for UV absorption. It is not clear what affect the addition of benzotriazole of *Valentine* would have on the photoconductivity and other essential properties of *Lee*'s polymer.

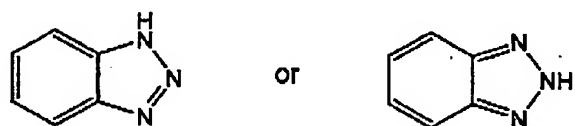
Second, even if one were to add a benzotriazole of *Valentine* to a side chain of the polymer of *Lee*, the result would not be Applicants' claimed invention as recited in Claims 2-4. In particular, in Claim 2, the polymer of Claim 1 has an Ar¹ selected from phenyl, substituted phenyl, biphenyl, substituted biphenyl, pyridyl, substituted pyridyl, bipyridyl, and

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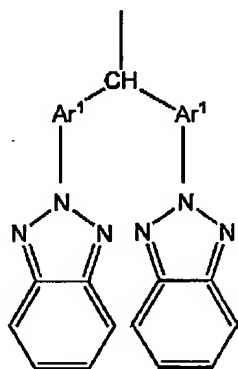
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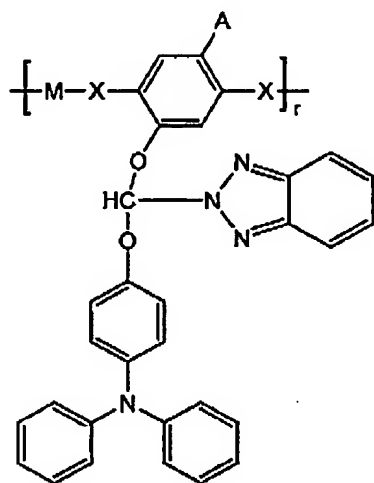
substituted bipyridyl, and none of these is suggested in *Valentine* or *Lee*. With respect to Claim 3, the recited benzotriazole is representative of the group $N(R^1)_2$ and is bonded to Ar^1 , which is an aryl or heteroaryl group. Substitution of benzotriazole at any point in the polymer of *Lee*, would not result in a polymer as recited in Claim 1. Benzotriazole has the structure



and when the $N(R^1)_2$ groups are benzotriazole groups, the following structure is obtained:



In contrast, use the *Lee* polymer with *Lee's* Formula 2 where R_2 is $-O-CH_2-O-$, and substitute benzotriazole on the CH_2 carbon to form a CH carbon. This results in the following hypothetical structure:



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Although there is a CH carbon, it is not bonded to three aromatic groups, and thus, this polymer is not the same as Applicants' invention as claimed in Claims 2-4. Substituting *Valentine's* benzotriazole at any other position in any of the *Lee* "A" groups in the polymer of *Lee's* Formula 1, does not result in the formation of a CH group bonded directly to three aromatic groups. In conclusion, no matter how one combines *Lee* with *Valentine*, Claims 2-4 are not taught or suggested.

Third, as noted above, in the polymer of *Lee* the chromophore group is always linked through an O or S atom, as shown by the structures of R_1 and R_2 . In Applicants' Formula I(a), the carbon atom having two $Ar^1-NR^1_2$ groups is bonded directly to Ar^2 . There is no O or S linkage in Applicants' polymer.

Applicants' respectfully submit that the Examiner has not made a *prima facie* case of obviousness and that this rejection be withdrawn.

(2) Usuki, U.S. Patent 6,740,407

Claims 2-4 were rejected under 35 U.S.C. § 103 as being unpatentable over *Lee*, as applied above, in view of *Usuki et al.*, U.S. Patent 6,740,407 ("*Usuki*"). Applicants respectfully traverse this rejection.

Usuki relates to a magnetic recording medium having a protective layer. There may also be a rust-preventative agent on the protective layer to improve durability. See *Usuki*, column 11, lines 57-60. The Examiner has stated that it would have been obvious to add a side-chain of *Usuki* to the compounds of *Lee*. Applicants disagree with the Examiner's conclusion for at least four reasons.

First, as with *Valentine*, Applicants can find no teaching, suggestion or motivation to combine the references as suggested by the Examiner. Applicants can find no reason to add the benzotriazole rust-preventative of *Usuki* to the hole-transporting polymer of *Lee*. There is no suggestion in *Lee* of the need for rust prevention or increased durability. It is not clear what affect the addition of benzotriazole would have on the photoconductivity and other essential properties of *Lee's* polymer.

Second, there is no suggestion in *Usuki* that benzotriazole can be used as a substituent on any polymer, let alone the polymer of *Lee* or Applicants' polymer. Benzotriazole is an example of a single compound, which can be used as a rust-preventative agent.

Third, even if one were to add benzotriazole to the polymer of *Lee*, the result would not be Applicants' claimed invention as recited in Claims 2-4, for all the reasons discussed above.

Fourth, as noted above, in the polymer of *Lee* the chromophore group is always linked through an O or S atom, as shown by the structures of R_1 and R_2 . In Applicants' Formula I(a), the carbon atom having two $Ar^1-NR^1_2$ groups is bonded directly to Ar^2 . There is no O or S linkage in Applicants' polymer.

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Applicants' respectfully submit that the Examiner has failed to make a *prima facie* case of obviousness and that this rejection be withdrawn.

CONCLUSIONS

In view of the above amendments and remarks, it is respectfully submitted that the pending claims, Claims 1-4, 18-21, and 40 are now in condition for allowance. A Notice of Allowance is earnestly requested.

Please charge any fees or credit any overpayment of fees which are required in connection herewith to Deposit account No. 04-1928 (E. I. du Pont de Nemours and Company).

Respectfully submitted,


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